

2*AF120 US

On/Off, Spring Return, 120 VAC, Auxiliary Switch



Technical Data	
Power Supply	1494
Power consumption in operation	8 W
Power consumption in rest position	3 W
Transformer sizing	11 VA (class 2 power source)
Shaft Diameter	1/2" to 1.05" round, centers on 1/2" and 3/4" with insert, 1.05" without insert
Electrical Connection	18 GA appliance cable, 3 ft [1 m], with 1/2" conduit connector
Overload Protection	electronic throughout 0° to 95° rotation
Angle of rotation	95°, adjustable 35...95° w/ZDB-AF2 US
Torque motor	180 in-lb [20 Nm]
direction of rotation motor	reversible with CW/CCW mounting
direction of rotation spring-return	reversible with cw/ccw mounting
Position indication	visual indicator, 0° to 95° (0° is full spring return position)
Manual override	3 mm hex crank (shipped w/actuator)
Running time motor	150 sec, constant, independent of load
Running time emergency control position	<20 sec
Ambient humidity	5...95% r.H. non condensing (EN 60730-1)
Ambient temperature	-22...122°F [-30...50°C]
Non-operating temperature	-40...176°F [-40...80°C]
Degree of Protection	IP54, NEMA 2, UL Enclosure Type 2
Housing material	zinc coated steel
Agency Listing	cULus acc. To UL 873 and CAN/CSA C22.2 No. 24-93
Noise level, motor	<45 dB (A) motor, spring return 62 dB (A)
Maintenance	maintenance free
Quality Standard	ISO 9001
Weight	6.9 lbs (3.1 kg.)

†Rated Impulse Voltage 4kV, Type of action 1.AA, Control Pollution Degree 3.

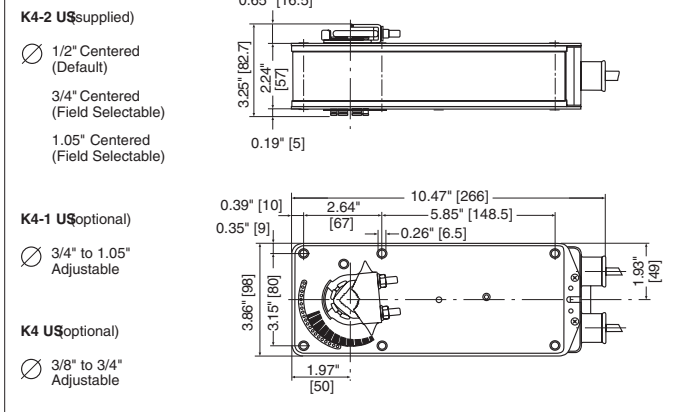
Application

For On/Off, fail-safe control of dampers in HVAC systems. Actuator sizing should be done in accordance with the damper manufacturer's specifications. Control is On/Off from an auxiliary contact or a manual switch. The actuator is mounted directly to a damper shaft up to 1.05" in diameter by means of its universal clamp. A crank arm and several mounting brackets are available for applications where the actuator cannot be direct coupled to the damper shaft. Maximum of two EF's can be piggybacked for torque loads of up to 540 in-lbs. Minimum 3/4" diameter shaft and parallel wiring.

Operation

The AF series actuators provide true spring return operation for reliable fail-safe application and positive close off on air tight dampers. The spring return system provides consistent torque to the damper with, and without, power applied to the actuator. The AF series provide 95° of rotation and are provided with a graduated position indicator showing 0° to 95°. The AF has a unique manual positioning mechanism which allows the setting of any damper position within its 95° of rotation. The AF series actuators are shipped at 5° (5° from full fail-safe) to provide automatic compression against damper gaskets for tight shut-off. When power is applied to the AF series, the manual mechanism is released. The actuators will now try to close against the 0° position during its normal control operations. The manual override can also be released physically by the use of a crank supplied with the actuator. The AF uses a brushless DC motor which is controlled by an Application Specific Integrated Circuit (ASIC). The ASIC monitors and controls the actuator's rotation and provides a digital rotation sensing function to prevent damage to the actuator in a stall condition. The actuator may be stalled anywhere in its normal rotation without the need of mechanical end switches. The actuators are Double Insulated so a ground connection is not required. The AF120/230-S US version is provided with two built-in auxiliary switches. These SPDT switches are provided for safety interfacing or signaling, for example, for fan start-up. The switching function at the fail-safe position is fixed at 5°, the other switch function is adjustable between 25° to 85°.

Dimensions (Inches[mm])



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Typical Specification

On/Off spring return damper actuators shall be direct coupled type which require no crank arm and linkage and be capable of direct mounting to a jackshaft up to a 1.05" diameter. The actuators must be designed so that they may be used for either clockwise or counter clockwise fail-safe operation. Actuators shall have a manual positioning mechanism accessible on its cover. Actuators shall use a brushless DC motor and be protected from overload at all angles of rotation. Run time shall be constant and independent of torque. If required, two SPDT auxiliary switches shall be provided with one switch having the capability of being adjustable. Actuators with switches must be constructed to meet the requirement for Double Insulation so an electrical ground connection is not required to meet agency listings. Actuators shall be cULus listed, have a 5 year warranty, and be manufactured under ISO 9001 International Quality Control Standards. Actuators shall be as manufactured by Belimo.

Wiring Diagrams

